

Index

Ability grouping, 257, 262, 368-70
Abstraction, 69, 290, 440
Academies, 18, 372
Acceleration, 71
Accrediting associations, 29, 305
Across the Years (Percival), 354
Activist approach, 397, 444
Acts, legislative
 Act for the Encouragement of Elementary Education, 356
 Act for the establishment of free schools . . . , 355
 British North American Act of 1867, 412
 Common Schools Act, 23, 372
 Compulsory attendance laws, 109, 184, 386, 393, 403
 District Public School Act (Ontario), 372
 Education Act of 1841, 356-57
 Education Act of 1846, 357
 Fabrique Act, 356
 GI Bill, 327
 Higher Education Act, 332
 Massachusetts law of 1642, 17
 National Defense Education Act, 143, 267
 Union Act of 1840, 375
Adams, Daniel, 22, 373
 Adam's New Arithmetic, 362
 Arithmetic in which the Principles of Operating by Numbers are Analytically Explained, and Synthetically Applied, 22
Adams, John, 21
 Adam's New Arithmetic (Adams), 362
Addison-Wesley Elementary Mathematics textbook series, 443
Adler, Irving, 146, 296
Advanced Arithmetic for Canadian Schools (Smith and McMurchy), 379
Advanced placement programs, 250
Agassiz, Louis, 31
Albert, A. A., 256, 270, 272
Alberta Teachers' Association (A.T.A.), 423, 432
Alcott, Bronson, 13
Algebra, 27, 28, 32, 33, 37, 40, 41, 47, 48, 51-55, 78, 82, 158-61, 163, 165-66, 167, 168, 170-72, 176-77, 183, 187, 203, 206, 209, 211, 218-20, 222, 228, 234, 244, 247, 253, 254, 269, 276, 277, 278, 283, 293, 304, 308, 310, 366, 368, 374, 376, 377, 378, 383, 389, 394, 397, 404, 408, 413, 420, 421, 423, 424, 434, 435, 440, 444
Boolean, 82
difference between arithmetic and, 203
as generalized arithmetic, 160, 178, 207, 221
as general mathematics, 220-22
linear, 294, 330, 344, 433
matrix, 276
modern, 78, 261, 265
utility of, 178
Algebra (Bridge), 374
Algebra (Hall and Knight), 422
Allen, Frank B., 80, 209
Allendoerfer, Carl, 256, 260
Althouse, Dr., 402, 410
American Association for the Advancement of Science (AAAS), 62, 80, 273
guidelines (with NASDTEC), 348-50
Works: "Mathematics Instruction for Purposes of General Education," 62; "The Preparation of High School Science and Mathematics Teachers," 327-28
American Association of School Administrators (AASA), 240
American Federation of Teachers of the Mathematical and Natural Sciences, 39, 180

American Historical Association, 169
American Journal of Mathematics
 (Sylvester and Story), 30
 American Mathematical Society
 (AMS), 4, 30, 39, 42, 75, 169, 170,
 175, 231, 237, 256, 270, 271, 272, 275,
 324. *See also* Committee subentries
 Chicago section, 30
 American Philological Association, 169
American Practical Navigator, The
 (Bowditch), 21
Analysis of New Mathematics Programs, An (NCTM), 76, 284-85
 Analytic method of discovering proofs,
 167
 Angell, James Burrill, 29
 Applications, 290, 294, 423. *See also*
 Social utility
 Appreciation of mathematics, 62, 204,
 241, 260
Approximate Computation (Bakst),
 259
 Archibald, R. C., 40
 Arithmetic, 27, 37, 41, 49, 52, 55, 93, 98,
 99, 102, 104-5, 121, 130-31, 157-58,
 164-67, 206, 228, 253, 304, 355, 366,
 372, 373, 375, 376, 383, 394, 397,
 402, 413, 414, 415-19, 420, 421, 424-
 25, 464. *See also* Number, science
 of
 aims of, 51
 ciphering books for, 13-14, 105, 372
 commercial, 13, 52, 219, 366, 376,
 390, 394, 407
 difference between algebra and, 203
 generalized, 221
 goals of, 318
 grade placement of topics in, 127, 165
 integrated study of, 47
 intellectual, 25
 mental, 25, 382, 413, 416, 425
 minimum essentials for, 190
 postponement of topics in, 48, 50
 as preparation for algebra, 158
 rote procedures in, 104
 segmented approach to, 185
 theories of instruction in, 125 (*see*
also Meaning theory of arithmetic)
 unit as fundamental idea of, 102
Arithmetick in which the Principles of
Operating by Numbers are Analytically Explained, and Synthetically applied (Adams), 22
Arithmetic (Bonnycastle), 373, 374
Arithmetick (Davies), 29
Arithmetick (Smith and Roberts), 420
Arithmetica of Cyffer-Konst . . . Als
Mede Een kort ontwerp van de
Algebra (Venema), 16
Arithmetick, Vulgar and Decimal
(Greenwood), 12, 23
Arithmetic Made Easy to Children
(Kimber), 103
Arithmetic on the Plan of Pestalozzi
with Some Improvements, An
(Colburn), 22, 103
Arithmetic Primer for Young Masters
and Misses, An (Temple), 103
Arithmétique ou l'art de compter
toutes sortes de nombres avec la
plume et les jettons, L' (Father
Jean Francois), 360
Articulation, 29, 33, 53, 61, 71, 78, 398
Art without Science (Eaton), 29
Arte para aprender todo el menor del
arithmetica sin maestro (Paz), 12
Asbury, Frank, 435
Association
 Alberta Teachers' Association, 423,
 432
 American, of School Administrators,
 240
 American, for the Advancement of
 Science (*see main entry*)
 American Historical Association, 169
 American Philological Association,
 169
 Canadian, of Mathematics Teachers,
 430-31
 Central, of Science and Mathematics
 Teachers, 39, 176, 314 (*see also*
School Science and Mathematics)
 of Colleges and Secondary Schools
 of the Middle States and Maryland,
 169, 171
 Mathematics and Physics, of Ontario,
 387
 National Education Association (*see*
main entry)
 National, of Secondary School Principals, 245
 National, of State Directors of
 Teacher Education and Certification, 80, 348-50
 National Teachers Association, 33
 New England, of Colleges and Secondary Schools, 169

New England, of Teachers of Mathematics, 80
 North Central, of Colleges and Secondary Schools, 169, 171, 175
 Nova Scotia Mathematics Teachers' Association, 440
 Ontario, of Teachers of Mathematics and Physics, 380, 398
 Ontario Education Association, 389, 390, 394, 401, 403, 404
 Progressive Education Association (*see main entry*)
 Southern, of Colleges and Secondary Schools, 169
 for Symbolic Logic, 236
 of Teachers of Mathematics in the Middle States and Maryland, 43
 of Teachers of Mathematics in New England, 43
 Astronomy, 19
 Audiovisual aids, 68, 78, 258, 448
 Austin, C. M., 6, 194-95
 Ausubel, David, 85
 Axiomatic development of theorems, 159, 161, 167, 174, 180-81, 441
 Axiomization, 41, 447
 Axioms for problem solving, 179
 "Background Mathematics for Elementary Teachers" (Ruddell, Dutton, and Reckzek), 328
 Ball State Teachers College Experimental Program, 267, 269
 Banneker, Benjamin, 20
 Barber, Harry C., 208
Basic Geometry (Birkhoff and Beatley), 41, 223, 278
 Beatley, Ralph, 41, 223
Basic Geometry, 41, 223, 278
 Beatty, Dr. S., 395, 408
 Beberman, Max, 69, 252, 253-54, 289, 453
 Bédard, Louis, 361
 Begle, Edward G., 75, 82, 139, 146, 237, 256, 265, 266, 270, 272, 273, 279, 280, 453
 Behaviorism, 113, 216
 Bell, E. T., 211, 224-25
 Bennett, A. A., 55, 226
 Benz, H. E., 212
 Bernard, M. M., 360
 Bers, Lipman, 272
 Bestor, Arthur E., 71, 134
 Betz, William, 50, 51, 180, 194, 208, 211-12, 213, 221, 225
 Biard, Father, 354
 Bibaud, Michel, 361-62
 Biggs, Edith, 439
 Binet, Alfred, 118
 Bing, R. H., 256
 Birchard, I. J., 382-83
 Birkhoff, George David, 41, 42
 Bishop, A. W., 409
 Bittinger, Marvin L., 143
 Blair, Vevia, 43, 200
 Bledsoe, Albert Taylor, 31
The Philosophy of Mathematics, 31
 Bobbit, Franklin, 188-89, 190, 192, 207, 214, 218, 224, 251
 Bolyai, Janos, 178
 Bonds. *See Connectionism*
 Bonham, G. C., 437-38
 Boring, Edwin, 186, 187
History of Experimental Psychology, 185
Bourdon's Algebra (Davies), 29
 Bourgeois, Sister Marguerite, 355
 Bouthillier, Jean Antoine, 361, 362
 Bowditch, Nathaniel, 20, 21, 30
The American Practical Navigator, 21
 translation of Laplace's *Mécanique Céleste*, 30
 Brauer, Richard, 75, 272
 Breslich, Ernest R., 51, 176, 195, 208, 219, 307
British Columbia Programme of Studies, 418
 British North American Act of 1867, 412
 Brooks, Edward, 26-27, 102, 110-11
 Brown, Claude H., 233
 Brown, Guillaume, 360
 Brown, Kenneth E., 209
 Brownell, William A., 49, 120, 123-24, 126, 128-29, 137, 216
 Brueckner, Leo J., 50, 120-21, 307
 Brumfiel, Charles F., 76, 269
 Brunel, Michel, 360
 Bruner, Jerome, 84-85, 136-37, 143, 145, 288, 289
The Process of Education, 84, 280, 288
 Buchan, Earl of, 21
 Buchan, J. M., 382
 Burlington, R. S., 249-50
 Burke, Edmund, 361
 Burton, William, 314-15

Burwell, Hugh, 429-30
 Business, influence of, on mathematics education, 188-92, 202
 Buswell, Guy, 220
 Butler, C., 307
 Butler, Nicholas M., 177
 Butts, Freeman, 164

Cairns, Stewart S., 71-72, 250-51
 Cajori, Florian, 11, 21, 160, 175, 180
 Calculus, the, 31, 55, 78, 207, 247, 260, 274, 292, 294, 310, 330, 395, 423, 433, 444
 Callahan, R. E., 188, 191
Education and the Cult of Efficiency, 188
 Cambridge Conference, 79, 82, 271-72, 291-94, 295-96, 348, 462
 on School Mathematics, 57, 145, 146-52, 345-46
 on Teacher Training, 78, 346-48
 Campbell, J. D., 372, 375, 377
 Canadian Association of Mathematics Teachers, 430-31
 Canadian Mathematics Congress, 336, 401-2, 443, 446
Why Study Mathematics? 402
 Canadian Teachers' Federation, 429, 430, 444, 447, 448
Mathematics and the Teacher, 444
 Ottawa seminar (1960), 428-30
 Careless, J. M. S., 392-93, 401
 Carnegie Foundation, 72, 74, 76, 251, 259, 270
 Carter, James G., 303
 Cartesian coordinates, 294
 Cartier, Jacques, 357
 Cavalieri, Bonaventura, 31
 Central Association of Science and Mathematics Teachers, 39, 43, 176, 177
 founding of, 314
School Science and Mathematics, 39, 43, 177
 Chaboillez, Augustin, 361
 Chateauneuf, Amy Olive, 158, 159
 Chauvaux, Charles, 360
 Christofferson, Halbert C., 222, 224
 Chicago, 176
 Conference on Research Potential and Training, 270, 271, 272
 Men's Mathematics Club of, 43, 195, 210
 World's Fair, 41

Child-study movement, 116, 117, 119, 133
 expressionism in the, 119
 child-centeredness in the, 119, 131-32, 196
 Christian Brothers, 356, 362
 Chronology of events, 23, 34-35, 44-45, 65-66, 88-89
 Chute, H. N., 177
 Clapp, F. L., 114
 Clark, John R., 191, 206, 215, 221
 Clason, Robert, 13, 38
 Classical colleges, 354, 358-59, 368
Classroom Management (Bagley), 188
 Clinchy, Evans, 287-89, 290-91
 Clinton, DeWitt, 303
 Coar, Henry, 173
 Cognition, 217
 Colburn, Warren, 2, 4, 21, 25-26, 32, 306-7, 373
An Arithmetic on the Plan of Pestalozzi with Some Improvements, 22, 103
First Lessons, 26, 105
 inductive approach of, 32
 inductive discovery of, 26
An Introduction to Algebra on the Inductive Method of Instruction, 32
 Coleman, A. J., 434
 College Entrance Examination Board (CEEB), 42, 73-74, 168, 171, 202, 209, 221, 235, 259, 260, 266, 446.
See also Commission and Committee subentries
 Advanced Placement Program, 71
 examinations, 171, 234, 260
Report of the Commission on Mathematics, 74
 College entrance requirements, 18, 29, 37, 53, 54, 61, 68, 168-73, 180, 201, 202, 366
 College preparatory programs, 53, 69, 239, 241, 242, 260-61, 262, 414, 433, 446
 Colleges
 Antioch College, 331
 Ball State Teachers College, 76, 267, 269
 Collège Charles-Carnier, 360
 Collège de Montréal, 360
 College of St. Catherine, 332
 College of William and Mary, 18
 Loyola College, 368

Montana State College, 332
 Reed College, 331
 Upper Canada College, 373
 Yale College, 15
 Collèges d'Enseignement Général et Professionnel (C.E.G.E.P.), 368
 Colleges for Professional and Vocational Training, 368
Commentaries on Pure and Applied Mathematics (Wigner), 457
 Commission
 on Accredited Schools of the North Central Association, 171
 on Aims and Objectives of Education in Ontario, 428
 Educational Policies Commission (NEA and AASA), 240, 244, 246
 (see also *Education for All American Youth*)
 Hall-Dennis Commission (*see* Commission, on Aims and Objectives of Education in Ontario)
 Hope Commission, 391, 393, 401, 410
 International, on the Teaching of Mathematics (International Congress of Mathematicians), 39, 46, 167, 182-83, 311-12, 390-91
 Joint Commission (MAA and NCTM), 54, 55, 58, 61, 62, 227-31, 233, 236, 239, 259, 268, 323-24
 on Mathematics (CEEB), 73, 76, 235, 237, 259-66, 268, 270, 271, 273, 276, 334-35, 409, 411, 428, 434
 Ontario Mathematics Commission (O.M.C.), 284, 434, 435, 436, 441
 Royal, of Inquiry on Education in the Province of Quebec, 365, 402
 on Post-War Plans (NCTM), 6, 50, 54, 58, 60, 61, 67, 243-46, 250, 257, 324-25, 327
 on the Reorganization of Secondary Education (NEA), 192
 on the Secondary School Curriculum (PEA), 54-55
 on the Training and Utilization of Advanced Students of Mathematics (MAA), 62, 321-23
 Committee
 on Advanced Placement (CEEB), 71
 on College Entrance Requirements (NEA), 33, 42, 46, 168-69, 170, 175, 307-8
 Cooperative, on the Teaching of Science and Mathematics (AAAS), 62, 68, 80, 327-28, 336-37
 on Economy of Time (NEA), 168, 190, 194, 248
 of Eight (SMSG), 272
 Elementary Education Committee (O.M.C.), 437, 438-39
 of Fifteen on Elementary Education (NEA), 37, 108, 168
 of Fifteen on the Geometry Syllabus, National (American Federation of Teachers of the Mathematical and Natural Sciences and the NEA), 39, 180, 207, 222
 on the Function of Mathematics in General Education (PEA), 225-27, 230-31, 233, 239
 on Geometry (NCTM), 223
 In-Service Education Committee (NCTM), 333
 National, on Mathematical Requirements (MAA), 5, 40-43, 46-47, 52, 53, 57, 62, 197-209, 219, 221, 222, 223, 248, 316-19
 Physical Science Study Committee (PSSC), 74, 75, 271
 Policy, for Mathematics, 270
 on the Problem of Mathematics in Secondary Education (NEA's Commission on the Reorganization of Secondary Education), 62, 193
 Secondary School Committee (Canadian Mathematics Congress), 446
 Secondary School Curriculum Committee (NCTM), 266-67, 335-36
 of Seven (National Society for the Study of Education), 125-27
 Standing, on Education and Schools, 356
 Subcommittee on Education for Service of the War Preparedness Committee (AMS and MAA), 237
 of Ten on Secondary School Studies (NEA), 4, 33, 46, 163-68, 170, 173, 186, 307-8, 387, 388, 389, 463
 on the Undergraduate Program (CUP), 81
 on the Undergraduate Program in Mathematics (CUPM) (MAA), 81, 337-40, 341-45
 War Policy Committee (AMS and MAA), 60
 War Preparedness Committee (AMS and MAA), 58, 231, 237

Common learnings, 239, 243, 244
 Common Schools Act, 372
 Commonwealth Conference on Mathematics in Schools, 449
 Commutativity, 49
 Competence, 6, 47, 244
 functional, 58, 60, 63, 68, 69, 191, 244–
 45, 246, 257
 Complex numbers, 247
 Compulsory attendance laws, 109, 184,
 386, 393, 403
 Computation, 48, 52, 229
 from approximate data, 203
 skill in, 127, 218, 222
 Computer-programming instruction, 281, 437
 Computers, 135, 144, 290, 448
 Comte, Auguste, 32
 Conaht, James Bryant, 340–41
 Concepts
 nonverbal awareness of, 294
 versus skills, 285
 Conference Board of the Mathematical Sciences, 80
 Conference on Mathematics of the Committee of Ten, 164–68
 Congregation of Notre Dame, 355, 360
 Connectionism, 38, 49, 113, 115, 128,
 129, 133, 216, 313, 318, 417. *See also Learning theory*
 common-element paradigm for, 187
 “Contents of Children’s Minds, The” (Hall) 108
 Continuity, 78
 Correlated mathematics, 166, 173, 176,
 178, 196, 205, 206, 207, 395
 Council of Education (Quebec), 357,
 358
 Council of Public Instruction (Ontario), 375, 376, 379
 Counts, George S., 119
 Dare the School Build a New Social Order? 119
Cours d’Algèbre (Garand), 364
Cours d’Algèbre Élémentaire (F.E.C.), 364
 Cousin, Victor, 31
 Crathorne, A. R., 43, 200
 Cremin, Lawrence A., 108, 118, 119–20,
 157, 164, 184, 240
 Cubberly, Elwood P., 189
 Cuisenaire-Gattegno method, 365
 Cuisenaire rods, 143, 443, 444
 Cult of efficiency, 188–92, 202
 Cultural values, 63, 204
 Curriculum, 228, 375, 376, 439–40
 college, 19–20, 28, 81
 core, 191, 241, 243, 447
 differentiated, 257
 elective approach to building of, 164
 elementary school, 164
 experimentation with the, 327
 four divisions of learning in, 239
 grade placement of topics in, 122,
 127, 165, 459
 high school, 413
 integrated, 409, 414
 junior high school, 208, 211, 218
 model, 206–7
 spiral, 38, 78, 79, 116, 220, 279, 292, 436
 traditional, 243, 247, 378
 unified, 239 (*see also* Unification movement; Unified mathematics)
 watering down the, 213
 Currie, I. I., 416
 Daboll, David A., 15
 Daboll, Nathan, 15
Daboll’s Schoolmaster’s Assistant, Being a Plain Practical System of Arithmetic; Adapted to the United States (Daboll), 15
 Dainville, François de, 359
 Dalrymple, Charles O., 190
 Dane, Nazala, 447–48
Dare the School Build a New Social Order? (Counts), 119
 Data, 57, 226
 analysis of, 160
 Davies, Charles, 29, 31, 42, 161
Arithmetick, 29
Bourdon’s Algebra, 29
Descriptive Geometry, 29
Legendre’s Geometry, 29
The Logic and Utility of Mathematics with the Best Methods Explained and Illustrated, 34
Surveying, 29
 Davis, Robert B., 77, 139
 Dean, J. E., 398
 Decimal currency in Canada, 377
 Deductive thinking, 26, 73, 260, 262,
 382, 390, 431
 De Garmo, Charles, 306, 307
 Del Grande, J. J., 418
 De Moivre’s theorem, 440
 Denchau, Denys, 361
 Depression

the British, of 1857, 374
 the Great, 53, 393, 396, 418
 Désaulniers, Isaac Le Sieur, 362
 Descartes, René, 31
Descriptive Geometry (Davies), 29
 Determinants, 247
 Developmental Project in Secondary Mathematics of Southern Illinois University, 269, 284, 296
Developmental Psychology of Jean Piaget, The (Flavell), 142
 Dewey, John, 38, 39, 48, 94, 111, 116, 117, 119, 176, 186, 192, 215, 216, 217, 289, 307, 313
The Psychology of Number, 111, 381
 Dickman, Kern, 250
 Dienes, Zoltan P., 78, 144, 444, 448
 Discovery approach to instruction, 32, 72, 143, 254, 255, 279, 288, 293, 297, 444. See also Heuristic approach
 Discovery learning, 254, 255, 262, 293, 436
 Discovery teaching, 2, 84, 85, 330
 Distributive law, 178–79, 284
 District Public School Act (Ontario), 372
 Dolbeau, Jean, 354
 Dominion status for Canada, 385
 Douglas, Edwin C., 260
 Douglass, Harl R., 220, 250
 Downey, W. F., 200
 Drill, 48, 49, 131, 213, 218–19, 220, 229, 232, 277, 291, 293, 305, 403, 413, 416, 417, 418, 447
 Duff, George, 447
 Dumont, Eustache, 361
 Dunbar, Ruth, 134
 Duplessis, Pacifique, 354
 Durham, Lord, 356, 375
 Durrant, J. E., 402, 403
 Duvernay, Ludger, 363

Eaton, Amos, 29
Art without Science, 29
 Education
 departments of, 306
 of girls, 355
 schools of, 306
 Education Act of 1841, 356–57
 Education Act of 1846, 357
 Educational Services Incorporated, 345
 Educational Testing Service (ETS), 73, 259, 270
Education and the Cult of Efficiency

(Callahan), 188
Education for All American Youth
 (Educational Policies Commission), 239, 243
Education through Mathematics, 423
 Edwards, P. D., 250
 Eicholz, Robert, 269
 Elective courses, 28, 29
Elementary Algebra, First Course
 (Millis), 178
Elementary Arithmetic for Canadian Schools (Smith and McMurchy), 379
Elementary Mathematics from an Advanced Standpoint: Geometry
 (Klein, tr. by Hedrick and Noble), 41, 183
 Elementary school, 25–27, 37–38, 48–51, 76–78, 137, 307, 358, 372, 437, 444, 445. See also Curriculum, elementary school
 algebra in, 37, 164, 169
 geometry in, 2, 77, 164, 181, 202, 437
Elementary Trigonometry (Hall and Knight), 365, 422
Elements of Algebra (McLellan), 380–81, 382
Elements of Algebra (Sangster and Todhunter), 379
Elements of Euclid (McKay), 383
Elements of Geometry (Legendre), 16
 Elcker, Paul, 83
 Eliot, Charles William, 28, 164
 Elliott, Edward Charles, 314
 Elliott, H. A., 449
Emerging Practices in Mathematics Education (Twenty-second Yearbook, NCTM), 257–59
 Enrichment materials, 72, 78
 Enrollment, 184, 217, 378, 393, 396
 in algebra, 209
 college, 249
 in geometry, 54, 209, 223
 in mathematics, 48, 53–54, 58, 197, 209
 in secondary schools, 212, 413
 Equation, concept of, 166
 Equation solving, 179, 242, 253
 Euclid, 161, 180, 373, 374, 376, 389, 390, 409, 419
Euclid (Todhunter and Loney), 422
Euclid's Elements of Geometry (Potts and Todhunter), 379
 Eudoxus, 167
 Evaluation, 257, 285, 293

Evenson, A. B., 431-32
 Experimental courses, 201, 205

Fabrique Act, 356
 Faculty psychology, 28, 99, 102, 113,
 133, 156, 161, 162, 164, 166, 305,
 313, 415-16

Failure rates, 53, 163, 177, 197, 211, 213
 Faught, D. T., 434, 440-41
 Fawcett, Harold P., 58, 75, 223-24, 243,
 258, 402-3, 409

Fédération des Écoles Chrétiennes
 (F.E.C.), 364
Cours d'Algèbre Élémentaire, 364

Fédération de l'Instruction Chrétienne
 (F.I.C.), 364
Géométrie Analytique, 364
Manuel des Écoles Chrétiennes, 364

Fehr, Howard, 243, 260, 409
 Fellowship programs for teachers, 332
*First Book of Arithmetic for the Use
 of Schools* (Dublin), 362

First Lessons (Colburn), 26, 105
 Fisher, J. J., 341-42
 Flexible scheduling, 143
 Foberg, J. A., 198, 200
 Forces, 8, 12-13, 20, 22-23, 24-25, 34,
 36, 44, 48, 64-65, 67-72, 78, 87-88,
 95-97, 98, 118-20, 156-57, 162-63,
 184, 191, 209-12, 235-39, 370, 460-62

Foreign influences, 12, 202, 303, 306-7,
 312-13, 318, 390
 European influences, 166
 French influences, 16, 28, 29

Formal instruction, postponement of,
 67

Formulas, 52, 206, 220, 242
Foundations of Geometry (Hilbert,
 tr. by Townsend), 41

Fractions, 52, 415
 Franklin, Benjamin, 18, 20
 Fraser, Bishop, 380
 Frères des Écoles Chrétiennes, 356,
 362

Freud, Sigmund, 119
 Freyle, Juan Diez, 12, 13, 16
 Frobel, Friedrich, 25, 31, 104
 Functions, 226, 253, 261, 264, 274, 276,
 368, 410, 435
 concept of, 41, 47, 57, 73, 158, 160,
 174, 178, 180, 201, 202, 204, 205-6,
 208, 209, 221, 398

Fundamental operations, 203
 Fused mathematics, 176-77, 179

Gagné, Robert M., 84, 140-41, 145
 Gagnon collection, 360
 Garth, W. F., 443
 General Board of Education (Ontario),
 373
 General education, 58, 60, 61, 62, 63, 248
 General Education Board (New York
 City), 198
*General Education in School and Col-
 lege*, 246-48
 General mathematics, 41, 47, 51, 52, 53,
 55, 191, 222, 241, 244, 258, 319,
 397, 398, 399, 425

Geometric construction, 52, 192
Géométrie Analytique (F.I.C.), 364
Géométrie Spontanée de l'Enfant, La
 (Piaget), 83
Geometry (Greenleaf), 161-62
 Geometry, 27, 28, 33, 39, 40, 41, 47, 51,
 54, 55, 71, 73, 78, 82, 158, 161-62,
 163-165, 166, 168, 170, 174, 176-77,
 178, 179-82, 183, 196, 201, 203, 207,
 218, 221, 222-25, 228, 232-33, 242,
 247, 253, 254, 258, 276, 277, 278,
 293, 294, 304, 308, 368, 375, 376,
 378, 388, 390, 394, 397, 405, 408,
 413, 419-20, 421, 423, 424, 434, 436,
 437, 440, 441
 algebraic methods in, 390
 analytic, 31, 55, 78, 247, 258, 260, 274,
 310, 330, 366, 381, 383, 395, 398
 applications of, 223
 concrete, 168, 169
 of conic sections, 162, 388
 coordinate, 261, 264, 390
 demonstrative, 169, 206
 elementary school, 2, 77, 164, 181, 292,
 413, 437
 goals of, 167
 intuitive, 33, 41, 138, 206, 208-9, 219,
 220, 222, 366, 389, 397, 430
 loci in, 207
 logic in, 167, 222
 nonmetric, 140
 omission of formal theories in, 207
 original exercises in, 161, 162, 167, 222
 plane, 172, 207, 261, 366
 proof in, 167, 207, 222
 real, applied problems in, 178, 179, 182
 solid, 54, 55, 162, 172, 181, 182, 207,
 223, 261
 space perception in, 181, 229, 261
 utilitarian features of solid, 181
Geometry Project (Hawley's), 140

Geometry with Coordinates (SMSG), 278
 Gestalt psychology, 49, 128, 216, 217
 Gibb, E. Glenadine, 299
 GI Bill, 327
 Gillespie, William Mitchell, 31
The Philosophy of Mathematics, 31-32
 Ginsburg, Jekuthiel, 19
 Gleason, A. M., 256, 291
Goals for School Mathematics (Cambridge Conference), 57, 291, 345-46
 Goddard, E. C., 465
 Goodlad, John, 280
 Graduate education, 30
Grammar-School Algebra (Griffin), 174
Grammar School Arithmetic (Wentworth), 156
 Graphic representation, 55, 192, 203, 209, 228, 229
 Graphs, 41, 52, 158, 174, 206, 209, 220, 242, 253, 366, 390, 397, 398, 435, 437
 Grassmann, Hermann Günther, 165
 Gray, W. B., 379-80, 381, 383-84, 388, 390, 391, 394, 397-98
 Greater Cleveland Mathematics Program (GCMP), 77, 139, 284
 Greenwood, Isaac, 12, 19, 21
Arithmetick, Vulgar and Decimal, 12, 23
 Greenwood, James, 167
 Grossnickle, Foster E., 307
Growth of Logical Thinking from Childhood to Adolescence, The (Piaget), 83
Growth of Mathematical Ideas, Grades K-12, The (Twenty-fourth Yearbook, NCTM), 267, 429
 Grube system, 103
 Guerin-Lajoie, Paul, 367
 Gugle, Marie, 209, 219, 222
 Guidance, 67, 68, 240-41, 246
Guidance Pamphlet in Mathematics for High School Students (NCTM), 58, 67, 245
 "Guidance Report" (Commission on Post-War Plans), 245, 250
 Gundlach, B. H., 77
 Gwilliam, Robert B., 447
 Hall, G. Stanley, 108, 109, 117, 119, 177
 "The Contents of Children's Minds," 108
 Hall, Samuel R., 303
 Hall-Dennis report, *Living and Learning*, 389, 428
 Halsted, G. B., 41, 175, 178
Rational Geometry, 41
 Hamilton, Sir William Rowan, 31, 161, 165
 Hancock, John D., 233
 Hanna, Paul R., 50
 Hart, Walter W., 180, 218
 Hart, William L., 58, 231
 Hartung, Maurice L., 55, 226, 365, 409
 Harvard report, the, 241-43, 247, 248
 Hawley, Newton S., 77, 140
Hawney's Complete Measurer, 16
 Heaviside, Oliver, 458-59
 Hedrick, Earle R., 43, 175, 180, 186-87, 198
Elementary Mathematics from an Advanced Standpoint, 41
 Heidbreder, Edna, 185
 Henderson, Kenneth B., 250
 Hendrix, Gertrude, 232
 Herbart, Johann Friedrich, 25, 31, 110, 115
 Herbartian movement, 305, 306
 doctrine of interest in the, 306
 fundamental meanings in the, 306
 Heuristic approach, 32, 292. See also
 Discovery approach
 Hewett, Edwin, 309
 Hewitt, Glenn, 195
High School Algebra (Milne), 159
 High school entrance examinations, 386
 Higher Education Act, 332
 Hilbert, David, 41, 178, 211, 269
Foundations of Geometry, 41
 Hildebrandt, Martha, 260
 Hill, Thomas, 161, 166
History of Experimental Psychology (Boring), 185
History of Mathematics in Europe (Sullivan), 456
 Hofstadter, Richard, 168
 Hornbook, 13
 Horne, Edgar B., 402, 446
 Houder, Father, 360
 Houghton Mifflin textbooks, 443
 Hrabi, Dr. J., 433-34, 446
 Hull House, 168
Humanized Geometry, An Introduction to Thinking (Blackhurst), 217, 223
 Huntington, Edward V., 41, 42, 180

Hutchins, Robert M., 134

Immigration, 184, 362, 374

Incidental learning, 48, 50, 67, 122, 125, 318, 319

Incommensurability, 162, 182

Individual differences, 6, 28, 51, 56, 193, 194, 196, 197, 212-13, 244, 246, 257, 262, 286-87, 293, 407, 413

Individual needs. *See* Social utility

Inductive thinking, 26, 32, 160, 165-66, 192, 253, 382, 390

Industrial education. *See* Vocational education

Inequalities, 261

In-service teacher education, 30, 80, 281, 308, 309, 313, 314-16, 319, 328, 329-34, 401, 441, 442, 463. *See also* Institutes

in Russia, 429

supervision as factor in, 314-15, 333-34

television courses for, 443

Insights into Modern Mathematics (Twenty-third Yearbook, NCTM), 267

Institutes, 74, 77, 80, 81, 252, 314, 316, 319, 330-32, 432, 463

Boston College Mathematics Institute, 284

Institute of Mathematical Statistics, 256

Instruction, 83-85. *See also* Learning theory

- adapting, to the individual, 25, 413
- colonial, 13
- computer-assisted, 142, 144
- environmental approach to, 444-445
- individualized, 144
- integrated materials for, 289
- spiralizing of, 55, 78

Instructional media, 344

Integrated mathematics. *See* Unified mathematics

Intelligence testing, 187, 189, 202, 212, 217

Intermediate Algebra (Tate), 365

Intermediate Mathematics, 364

International Congress of Mathematicians, 39-40, 182, 311. *See also* Commission, International, on the Teaching of Mathematics

American commissioners, 42

Introduction to Algebra on the Inductive Method of Instruction, An (Colburn), 32

Intuition, 85, 279, 292-93, 408, 447

Irish National textbook series, 375, 377

Issues, 7-8, 17, 22, 34, 36, 43-44, 47, 48, 63-64, 76, 86, 94-95, 156-57, 169-70, 213-18, 370, 455-60

Izzo, J. A., 174

Jackson, Andrew, 25

Jamay, Denis, 354

James, William, 186, 216

Jefferson, Thomas, 20

Jenkins, James, 395

Johns, A. E., 399, 408

Johnson, Francis Henry, 396, 427, 428

Joint professorships, 320

Jones, Phillip S., 250

Jones, W. C., 168-69

Judd, Charles H., 120, 176, 214, 216

The Measurement of Educational Products, 118

Junior college, 39, 56, 60-61, 62

Junior high school, 37, 39, 47, 51-53, 184, 206, 209, 230, 319, 391, 396, 397, 420, 446. *See also* Curriculum, junior high school

Kandel, I. L., 40

Kant, Immanuel, 31

Karnes, Houston T., 299

Karpinski, Louis C., 14

Kaufman, Burt, 296

Kaye, Garth, 439

Kelly, J. L., 256

Kemeny, J. G., 256

Kempner, A. J., 68

Kilpatrick, William Heard, 192, 193, 194, 195, 197, 208, 211, 251

Kinlin, J. F., 409, 434-35, 438

Kinnear, Miss J., 398

Kinney, Lucien B., 220, 286

Kirkconnel, Watson, 392

Klein, Felix, 41, 174, 183, 206, 244, 267, 284

Elementary Mathematics from an Advanced Standpoint: Geometry (tr. by Hedrick and Noble), 41, 183

Kline, Morris, 82-83, 285, 286

Knight, F. B., 111

Koffka, W., 216, 217

Kohler, Kaufmann, 216, 217
 Koos, Leonard V., 51

Laboratory teaching, 144, 174, 215, 219,
 257, 258, 293, 410, 439

Ladreyt, Casimir, 362

Laforce-Langevin, Jean-Pierre François,
 363

Laing, Inspector, 407-8

Laisant, C. A., 460

Lancasterian system, 97, 104

Laurin, Joseph, 362

Laval, Monseigneur de, 355

Lazar, Nathan, 222, 224

Learning

- programmed, 441, 448
- rate of, 228
- spaced, 229
- spiral, 38, 57
- stimulus-response (*see* Connectionism)
- transfer of (*see* Transfer of training)

"Learning of Fundamentals in an Arithmetic-Activity Program, The" (Mapes and Harap), 122

Learning theory, 36, 83-85, 115, 213,
 279-80

- association, 128
- field, 128, 129, 130

LeCaron, Joseph, 354

Lectures on Fundamental Concepts of Algebra and Geometry (Young), 42

Legendre, Adrien Marie, 17, 161, 180

- Elements of Geometry*, 16

Legendre's Geometry (Davies), 29

Leibnitz, Gottfried Wilhelm von, 31,
 363

Le Peltre, Mme. Marie Madeleine de,
 355

Lephrohon, C. P., 362

Lessons in Geometry (Hill), 419-20

Linear Associative Algebra (Peirce), 30

Living and Learning (Commission on Aims and Objectives of Education in Ontario), 389, 428

Lloyd, Daniel, 250

Lobachevsky, Nikolai Ivanovich, 41,
 178

Locke, John, 24, 31

Logic, 204, 222, 223, 230

Logic and Utility of Mathematics with the Best Methods Explained and Illustrated, The (Davies), 34

Lynd, Albert, 134

McConnell, T. R., 129, 130-31, 216

McCormick, Clarence, 307

McCutcheon, J. M., 393, 394, 396

McDonald, Frederick, 190

MacDonald, John A., 385

McDougall, A. H., 387-88, 463

McGuffey Readers, 157

McKenzie, R. N., 395

Mackenzie, William Lyon, 374

MacLane, Saunders, 256

MacLean, Bruce, 410

McLellan, James A., 38, 111, 307, 372,
 380, 382, 384, 387

- Elements of Algebra*, 380-81, 382
- Mental Arithmetic, Fundamental Rules, Fractions, Analysis*, 382
- The Psychology of Number*, 111, 381

McLeod report, 428

McMurry, Charles A., 306, 307

McMurry, Frank M., 110, 306, 307

McQueen, James, 398

Madison Project, 139, 143, 284

Makoff, Lester M., 281

Mallory, V., 307

Manipulation, 47, 160, 242

Mann, Horace, 30, 31, 43

Manpower for Research (Steelman), 68, 235, 238

Manpower needs, 67, 68, 69, 238

Manuel des Écoles Chrétiennes (F.I.C.), 364

Marie de L'Incarnation, the Venerable, 355

Martin, Professor, 291

Massachusetts Institute of Technology, 74, 440

Massé, Father, 354

Mastery of topics, 127, 418

Mathematical Analysis (Goursat-Herrick), 313

Mathematical Association of America (MAA), 5, 40, 42, 43, 53, 54, 63,
 197, 231, 237, 256, 271, 272, 316,
 323, 324. *See also* Commission and Committee subentries

- founding of, 314

Symposium on College Entrance Requirements, 68

Symposium on Teacher Education in Mathematics, 79

Works: *The Place of Mathematics in Secondary Education* (with NCTM), 226, 227-31; *The Reorganization of Mathematics in Secondary Education (The 1923 Report)*, 40-41, 46-47, 197-209, 219, 221, 222, 233, 316-19; *Universal Mathematics* (CUP), 81

Mathematical models, 283, 289, 297, 447, 457, 463

Mathematical Reviews, 70

Mathematical vs. social aims, 51
meaning, 50

Mathematicians, 134, 237, 242
college, 236, 238, 248, 260
research, 238

Mathematics
applications of, 68, 69-70, 79, 82, 170, 181, 227, 228, 233, 463 (*see also* Utilitarian aims in mathematics education)
applied, 175, 246, 399
business, 56, 219, 319, 372, 389, 447-48
colonial, 13-17
computer, 274, 344, 437-38
consumer, 56, 60, 219, 245-46, 257, 258, 265
early development of, in Western Hemisphere, 11-13
field work in, 404
grade-placement of topics in, 285, 399
history of, 181, 310
literacy in, 244, 285, 401, 404
logic and structure of, 63, 209, 228
purpose of, in secondary education, 202
science of, 177, 401
shop, 56
as a tool subject, 214, 246
unit approach to, 191

Mathematics and Physics Association of Ontario, 387

Mathematics and the Teacher (C.T.F.), 444

Mathematics educator, the, 234, 242, 454

Mathematics for Everyday Use, 421

Mathematics in Everyday Life textbook series, 232

Mathematics in General Education (PEA), 56-57, 225-27, 230-31, 268

"Mathematics Instruction for Purposes of General Education" (AAAS), 62

Mathematics Teacher (NCTM), 6, 43, 82, 194, 266

Mathématiques Générales (LaRue), 364

Mathématiques Intermédiaires (LaRue and Risi), 364

Matrices, 78, 82

Matriculation examinations, 382, 384, 408, 410

May, Kenneth O., 250, 251, 409-10, 411

Mayor, John R., 76, 277

Meaning, 48, 51, 71, 216, 219
teaching for, 218

Meaning theory of arithmetic, 49, 120, 123-25, 127, 130, 138, 139

Measurement movement. *See Mental measurement*

Measurement of Educational Products, The (Judd), 118

Mécanique Céleste (Laplace, tr. by Bowditch), 21, 30

Meder, Albert E., Jr., 256, 260, 272

Meister, Morris, 260

Memorization, 47

Menelaus, 402

Mensuration, 28, 52, 161, 192, 375, 376, 377, 405, 413, 437

Mental Arithmetic, Fundamental Rules, Fractions, Analysis (McLellan), 382

Mental discipline, 22, 27, 28, 32, 36, 38, 57, 99, 104, 113, 155, 156, 158, 160, 162, 163, 165, 166-67, 173, 186, 187, 193, 196, 197, 202, 205, 413

Mental measurement, 187, 189, 202, 212, 217

Meserve, B. E., 250

Methods, 382, 384
books on, 31
courses in, 31, 310

Michelson, Albert Abraham, 177

Miller, Norman, 401
Why Study Mathematics? 402

Millikan, Robert H., 177

Mills, the Reverend Mr., 356

Milne, Frank E., 440

Milne, William J., 160
High School Algebra, 159

Minnesota National Laboratory, 281

Minnesota School Mathematics and Science Teaching Project (MINNEMAST), 139

Minto, Walter, 21

Moise, Edwin E., 256, 274

Modern mathematics

essence of, 69
as new subject matter, 77, 80, 124
Monographs on Topics in Modern Mathematics (Young), 42, 178
Moore, C. N., 43, 200
Moore, Eliakim Hastings, 4, 39, 62,
174-75, 176, 178, 179, 183, 200, 206,
209, 388-89, 453
Morison, Samuel Eliot, 27
Morse, Marston, 58, 231
Morton, R., 307
Mosteller, Frederick, 256, 260
Motivation, 28, 56, 85, 183, 216, 228,
229, 293, 356, 398
Mulligan, Howard, 434
Multisensory aids, 68, 78, 258, 448
Myers, George, 176, 177, 178, 205, 208

National Academy of Sciences, 30
National Association of Secondary School Principals (NASSP), 245
National Association of State Directors of Teacher Education and Certification (NASDTEC), 80, 348-50
National Council of Teachers of Mathematics, 5, 42, 43, 75, 80, 194-96, 202,
211, 222-23, 232, 234, 266-68, 271,
284, 323, 324, 332, 365, 432, 453.
See also Commission and Committee subentries
Canadian affiliates: Association of Mathematics Teachers of the Province of Quebec, 365, 368; L'Association Mathématique de Québec, 365; Provincial Association of Mathematics Teachers, 365, 368
founding of, 314
regional orientation conferences in mathematics, 80, 281
Works: *An Analysis of New Mathematics Programs*, 76, 284-85; *Emerging Practices in Mathematics Education* (Twenty-second Yearbook), 257-59; *The Growth of Mathematical Ideas, Grades K-12* (Twenty-fourth Yearbook), 267, 429; *Guidance Pamphlet in Mathematics for High School Students*, 58, 67, 245; "Guidance Report" (Commission on Post-War Plans), 245, 250; *Insights into Modern Mathematics* (Twenty-third Yearbook), 267; *Mathematics Teacher*, 6, 43, 82, 194, 266; *The Nature of Proof* (Thirteenth Yearbook), 58, 224, 258; *The Place of Mathematics in Secondary Education* (with MAA), 226, 227-31; "Pre-Induction Courses in Mathematics" (with USOE), 59, 232; *The Revolution in Mathematics*, 76, 81, 282; *The Teaching of Geometry* (Fifth Yearbook), 223
National Defense Education Act, 143, 267
National Education Association (NEA), 5, 33, 163, 168, 171, 180, 193. *See also Commission and Committee subentries*
Department of Child Study, 108
Department of Superintendence, 52, 190
mathematics committee (Dept. of Superintendence), 52
National Council on Education, 163
National Herbartian Society, 110, 115
National Mensuration, 379
National Research Council (NRC), 256, 270
National Science Foundation (NSF), 72, 74, 75, 76, 81, 139, 235, 251, 256, 270, 271, 291, 330, 345
National Society for the Scientific Study of Education, 110
National Society for the Study of Education, 50
National Teachers Association, 33
Nature of Proof, *The* (Thirteenth Yearbook, NCTM), 58, 258
Nautical Almanac Office, 30
Negro teachers and students, plight of, 234
New Algebra for High Schools, A (Crawford, Dean, and Jackson), 364
New Analytic Geometry, A (Durrant et al.), 365
New and Complete System of Arithmetic Composed for the Use of the Citizens of the United States, A (Pike), 15-16
Newcomb, Simon, 30
Newell, 397
Newell, M. J., 195
New England Association of Colleges and Secondary Schools, 169

New England Association of Teachers of Mathematics, 80
 Newsom, C. V., 256
 Newton, Isaac, 31
 New York Mathematical Society, 4, 30
Bulletin, 30
 Nimitz, C. W., 58-59, 231
1923 Report, The. See Reorganization of Mathematics in Secondary Education, The
 Normal schools, 30-31, 37, 301-2, 302-8, 310, 376, 414, 418. *See also sub-entries, by name, under Schools*
 North Central Association of Colleges and Secondary Schools, 169, 171, 175
 Northrop, Eugene P., 63, 260
 Nova Scotia Mathematics Teachers' Association, 440
 Nova Scotia Summer School for Teachers, 443
 Nuffield Mathematics Project, 144, 444, 448
 Number, 229, 437
 as ratio, 38
 familiar properties of, 284
 ideas of, 26, 130
 logical approach to the teaching of, 416
 science of, 26, 38, 107, 157
 structural properties of, 49, 226, 344
 Number Highway textbook series, 417
 Numeration systems, 283
 bases for, 111, 284
 Mayan system, 11
 Nunn, T. Percy, 397

 Oakley, C. O., 249
 Objectives in mathematics education, 6, 98-99, 109-10, 120-21, 134-35, 173, 189, 193, 201, 202-4, 297, 403-4, 406, 411, 415, 457-58. *See also Articulation; Utilitarian aims in mathematics education*
 battle of, 193, 197, 214, 217, 218, 231, 234, 241, 248
 disciplinary objectives, 201, 202, 203, 220
 in the secondary school, 55, 155
 Obourn, Ellsworth S., 209
 Occupational training. *See Vocational education*
 Olney, A. C., 43, 200

 Ontario
 course of study of 1841, 375-76; of 1854, 376-77; of 1865, 377-78; of 1871, 379-80, 381; of 1878, 380, 381-82; of 1885, 383; of 1896, 388; of 1904, 389-90; of 1909, 390; of 1924, 394; of 1928, 394; of 1936, 397; of 1938, 398, 402; of 1952, 407-8
 Curriculum Revision Experiment (Porter Plan), 403, 404, 406, 410
 Ontario Curriculum Institute, 436
 Ontario Institute for Studies in Education, 436
 Ontario Teachers' Federation, 434 (*see also* Commission, Ontario Mathematics)
 Ontario Association of Teachers of Mathematics and Physics (O.A.T.M.P.), 380, 398
 Ontario Education Association (O.E.A.), 389, 390, 394, 401, 403, 404
Ontario Mathematics Gazette (O.M.G.), 441
 Operations, 57, 226, 284
 Organization for European Economic Cooperation (OEEC), 345, 429
 Orleans, Joseph B., 51
 Orth, Allen, 250
 Overn, Orlando, 158, 159, 209

 Page, David A., 77, 78, 140, 252, 255
 Panet, Claude, 360
 Parallel courses, 173, 292, 405, 436
 Parker, Colonel, 215
 Pasch's postulate, 181
 Patterns in Arithmetic project, 139
 "Payment by results," 380, 381
 Peano, Giuseppe, 180
 Pedagogy, 31
 Peirce, Benjamin, 30, 165
Linear Associative Algebra, 30
 Peirce, Cyrus, 303-4
 Perrault, Charles, 360
 Perry, John, 39, 174, 183, 388, 389, 397
 Perry movement, 39, 179, 389
 Pestalozzi, Johann Heinrich, 21, 22, 24, 25, 31, 32, 97, 103, 104-5, 306, 362, 416
 Petrie, Professor, 402
 Phillips, C. E., 374, 386
 Phillips, D. E., 111
 Philosophy, natural, 19

Philosophy of Arithmetic, The (Brooks), 31
Philosophy of Mathematics, The (Bledsoe), 31
Philosophy of Mathematics, The, Translated from the Cours de Philosophie Positive of Auguste Comte (Gillespie), 31-32
 Piaget, Jean, 83, 142, 145, 294, 441, 448, 461
The Child's Conception of Number, 83
 developmental stages, 142
La Géométrie Spontanée de l'Enfant, 83
The Growth of Logical Thinking from Childhood to Adolescence, 83
La Représentation de l'Espace Chez l'Enfant, 83
 Pieri, M., 180
Place of Mathematics in Secondary Education, The (NCTM and MAA), 226, 227-31
Plan of a Seminary for the Education of the Instructors of Youth (Gallaudet), 303
 Playfair, John, 16
 Plessis, Monseigneur, 355
 Porter, Dana, 403, 404-5, 410
 Porter Plan, 403, 404, 406, 410
 Postulates, 181, 223, 269
Practical Arithmetic, The (Perkins), 100
Practical Mathematics (Palmer), 185
 "Pre-Induction Courses in Mathematics" (NCTM and USOE), 59, 232
 "Preparation of High School Science and Mathematics Teachers, The" (AAAS), 327-28
 Price, G. Baley, 75, 249, 272
Primary Arithmetic (Wentworth), 415
 Probability, 78, 237, 276, 292, 294, 330, 344, 433, 435
 with statistical applications, 258, 261, 265 (*see also Statistics*)
 Problems, 408
 engineering, in vocational schools, 185
 practical, 207
 real, applied, 178, 179, 182, 183, 196, 214, 215
 from science, 177
 Problem solving, 57, 84, 85, 226, 229, 418
 accuracy in, 166, 389, 390, 403, 404
 approximation in, 57, 226, 394, 404
Process of Education, The (Bruner), 84, 280, 288
 Programmed materials, 281, 443
 Progressive education, 94, 140, 213, 225, 396
 activity unit in, 140
 movement, 215, 217, 234, 240, 414
Progressive Education (PEA), 119
 Progressive Education Association (PEA), 55, 56, 118, 119, 194, 215, 225, 233, 259. *See also Commission and Committee subentries*
Works: Mathematics in General Education, 56-57, 225-27, 230-31, 268; *Progressive Education*, 119
Progressive High School Algebra (Hart), 365
 Proof, 57, 69, 166, 224, 227, 285, 390.
See also Geometry, proof in
 Proportion, 52
 Protestant School Board of Greater Montreal, 367
Psychologia Rationalis (Wolff), 99
 Psychological research, 36, 213
 Psychologists, 78, 442
 European, 186
 task-analysis work of, 142
 Psychologizing, 33, 39, 417
Psychology, 3, 83-85, 97, 102, 103, 104, 106, 113, 117, 132, 140, 145, 185-87, 204-5, 212, 213, 216, 217, 228, 234.
See also Behaviorism; Connectionism; Faculty psychology; Gestalt psychology; Learning theory; Mental discipline; Transfer of training
 field theories of, 217
 functional approach to, 186
Psychology of Number, The (Dewey and McLellan), 111, 381
 PTA, 77, 284
 "Public School Leaving Examination" (Northwest Territories), 419
 Pullen, Harry, 405-7
 Quantifiers, 254
 Quebec
 Christian Brothers in, 356
 Frères des Écoles Chrétiennes in, 362
 Jesuits in, 354, 359-60
 Rebellion of 1837 in, 356
 Régoliots in, 354

Quebec (*Continued*)
 religious influence in, 354
 Roman Catholics in, 355
 struggle of two cultures in, 353-54
 Questionnaire studies, 205

Raisenne, Jérôme, 360

Rankin, W. W., 80

Ratio, 38, 52

Rational Geometry (Halsted), 41

Ray, Joseph, 157, 158
Intellectual Arithmetic, 157
The Little Arithmetic, 157
New Practical Arithmetic, 157

Readiness, 48, 49-50, 85

Real number system, 294

Reed, E. M., 103-4

Rees, Mina, 256, 271

Reeve, William David, 184, 208, 211, 212, 222

Reform, 33, 72-76, 81-83, 94, 250, 251, 281-84, 287-91, 387-92, 399-411

Relational thinking, 230

Rensselaer Polytechnic Institute, 20, 29

Reorganization of Mathematics in Secondary Education, The (MAA), 40-41, 46-47, 197-209, 211, 219, 221, 222, 233, 316-19

Report of the Commission on Mathematics (CEEB), 74

Report of the Subcommittee on Education (Alberta Post-War Reconstruction Committee), 418

Représentation de l'Espace Chez l'Enfant, La (Piaget), 83

Research in mathematics education, 41-42, 130, 454-55

Revolution, 78, 79, 81, 249, 281, 290, 460

Revolution in Mathematics, The (NCTM), 76, 81, 282

Rice, Joseph Mayer, 108-9, 114-15
 "Educational Research: Causes of Success and Failure in Arithmetic," 109

Rickover, Hyman, 134

Rigor, 166, 180, 292-93, 447

Rittenhouse, David, 20-21

Robb, C. W., 394

Robert, l'Abbé, 364
Compléments d'Algèbre, 364

Robertson, W. J., 387

Robinson, Floyd G., 429, 441-42

Rosenberger, N. B., 307

Rosenbloom, Paul, 256

Rourke, R. E. K., 260, 398-99, 401, 429

Rousseau, Jean Jacques, 25, 104, 119
Emile, 289

Royal Commission of Inquiry on Education in the Province of Quebec, 365, 402

Royal Institution for the Advancement of Learning, 355-56

Royumont seminar, 429

Rugg, Harold O., 191, 206

Russell, Bertrand, 180

Ryerson, Egerton, 372, 375, 377, 378, 380, 396, 412

Safford, Truman, 173

Saint-Sulpice library, 360

Sandford, Peter, 114, 117

Sangster, Herbert, 377
Elements of Algebra, 379
Irish National Arithmetic (rev.), 377
National Arithmetic, 377

Sawyer, W. W., 77

School administration, analogy of, to business management, 188-89

School and College Study of Admission with Advanced Standing, 71

Schoolmaster's Assistant, The: Being a Compendium of Arithmetic Both Practical and Theoretical, (Dilworth), 14-15

School Mathematics Study Group (SMSG), 74-76, 79, 81-82, 83, 139, 146, 208, 223, 235, 236, 237, 238, 256, 257, 267, 268, 269-81, 284, 438, 440, 441, 443, 463

National Longitudinal Study of Mathematical Abilities, 75, 281

Panel on Elementary School Mathematics, 77

self-evaluation, 281

textbooks, 82

Work: *Geometry with Coordinates*, 278

Schools
 accreditation of, 171
 Boston Latin Grammar School, 18
 Cass Technical School (Detroit), 206
 colonial, 13, 94, 98
 criticism of, 134
 common, 357, 371, 378, 379
 elementary (*see* Elementary school)
 English High School, 27
 federal versus local control of, 240

free, 372, 379
 Girls High School, 27
 grammar, 376, 378, 379
 Horace Mann School, 43
 Jacques Cartier Normal School, 357
 Latin grammar, 17, 18
 Laval Normal School, 357
 Lincoln School (Columbia University), 43, 191
 McGill Normal School, 357
 media in, 143
 Michigan State Normal School, 31
 missionary, 413
 nongraded, 143, 439
 Nova High School (Fort Lauderdale, Fla.), 296
 Nova Scotia Summer School for Teachers, 443
 Ontario School of Pedagogy, 372
 Parker School (Chicago), 176, 206, 215
 private, 372
 secondary, 27-28, 39-41, 51, 78-79, 162-63, 188-92, 231-33, 307, 312, 445-46 (see also Junior high school; Senior high school; Teacher training)
 Toronto Normal School, 377
School Science and Mathematics (CASMT), 39, 43, 177
 Schorling, Raleigh, 43, 47, 68, 200, 212, 213, 215, 221, 222
 Science of education, 190
 Scientism, 93-94, 106, 107-17, 118, 188, 202, 214, 215
 Sectional movements in Canada, 393
 Seeing through Arithmetic textbook series, 366, 433
 Seeing through Mathematics textbook series, 432
 Self-instruction, 12, 20, 362
 Seminar on New Thinking in School Mathematics (OEEC), 429
 Seminary
 Grand Séminaire de Québec, 355
 (see also University, Laval University)
 of Nicolet, 362
 Séminaire de Québec, 361, 363
 Senior Algebra (Durrell and Wright), 422-23
 Senior high school, 53-58
 election of mathematics courses in, 207
 Sequences, 253
 Sets, 73, 82, 254, 276, 282, 283, 344, 410, 435, 436
 Shuster, Carl N., 68, 404
 Seath, John, 380, 383, 392
 Seerly, H. H., 173
 Shanks, Merrill, 269
 Shibli, Jaber, 161
 Sigurdson, Solberg, 167, 173, 178, 205
 Simcoe, Lord, 371, 372
 Simon, Theodore, 118
 Simson, Robert, 16, 17
 Skills, 62, 166, 170, 218, 222, 260, 290, 405
 manipulative, 47, 160, 242
 Slaughter, H. E., 180
 Slow learner, the, 212, 213, 228, 244, 290
 Smiler, Helen B., 455
 Smith, David Eugene, 19, 38, 42, 43, 158-59, 168, 175, 180, 182, 193-94, 200, 208, 209, 307, 453, 454
The Teaching of Elementary Mathematics, 42, 307
 Smith, J. Hamblin, 382
A Treatise on Arithmetic, 424
 SMSG, *The Making of a Curriculum* (Wootton), 75
 SMSG textbooks, 82
 Sneddon, David, 211
Socialized Mathematics (Cooper), 421
 Social Science Research Council, 81
 Social utility, 6, 48, 58, 98-99, 110, 120, 122-24, 125, 131-32, 133, 135-36, 183, 190-92, 193-94, 196, 197, 214, 215, 220, 224, 225, 227, 243, 244, 246, 257, 277, 290, 294, 318-19, 386, 395, 404, 405, 418, 442
 Society
 needs of (see Utilitarian aims in mathematics education)
 needs of individual in (see Social utility)
 Sonley, J. A., 403-4, 464
 Southern Association of Colleges and Secondary Schools, 169
 Specialists, 143
 Speer, William W., 38, 111
 Spencer, Herbert, 31, 32, 38
 Spitzer, H., 307
 Sputnik, 135, 231, 256, 267, 327
 Stamper, A. W., 454
 Stanford University Institute for Mathematical Studies in the Social Sciences, 139

Statistical inference, 258
 Statistics, 41, 47, 51, 78, 207, 242, 246,
 247, 276, 292, 310, 319, 330, 344
 Steelman, John R., 68-69, 235, 238
 Manpower for Research, 68-69
 Stern, Catherine, 444
 Stimulus-response. *See* Connectionism
 Stone, C. W., 454
 Stone, John C., 191-92, 215, 218, 219,
 307
 Elementary Algebra, First Course,
 178
 Junior High School Mathematics, Book I, 191-92
 Stone, Marshall, 146, 231, 256, 295
 Stone, Mildred, 190
 Stowe, Calvin E., 31
 Strachan, the Reverend Dr., 373, 374
 Arithmetic, 373
Strayer-Upton Arithmetics, Higher Grades, 219
 Streaming, 257, 262, 368-70
 Structural properties of number, 49,
 226, 344
 Structure of mathematics, 6, 69, 73, 85,
 137, 140, 216, 242, 260, 277, 279, 283,
 285, 288, 431
 as an abstract system, 283
 axiomatic, 269
 importance of, in teaching, 84
 Students
 below-average, 274
 college-capable, 266, 273, 296
 gifted, 71, 248-50, 267, 274
 Superior Council of Public Instruction, 358
 Superposition, 390
 Suppes, Patrick, 77, 85, 139, 143, 144,
 145
 Surveying, 19
Surveying (Davies), 29
 Swenson, John A., 221
 Sylvester, James Joseph, 30, 165-66
 American Journal of Mathematics, 30
 Symbolic logic, 82
Symbolical Euclid (Blakelock), 374
 Symbolism, 57, 187, 227, 230
 Syracuse University-Webster College
 Madison Mathematics Project, 139,
 143, 284
 Teacher certification, 80, 305, 316, 328,
 344
 Teacher preparation for new programs,
 278-79, 289, 296
 Teachers
 college, 260
 counselors for, 328
 high school, 260
 modern algebra courses for, 80
 probability courses for, 80
 statistics courses for, 80, 310
 summer sessions for, 309
 Teachers colleges, 302, 308, 310. *See also* Normal schools
 Teacher training, 30-32, 37, 39, 42-43,
 61-63, 79-80, 201, 252, 257, 378, 428,
 463. *See also* Normal schools;
 Commission, International, on the
 Teaching of Mathematics; Com-
 mittee, National, on Mathematical
 Requirements
 of college teachers, 340 (*see also*
 Committee, on the Undergraduate
 Program in Mathematics)
 of elementary school teachers, 37,
 311, 313, 318, 320, 321, 325-26, 333,
 340-41, 348-49, 418-19 (*see also*
 Commission, on Mathematics;
 Committee, on the Undergraduate
 Program in Mathematics)
 fifth-year program in, 319, 345
 films for, 443
 implementation of recommendations
 for, 341-45
 internships, 345
 of junior college teachers, 56, 62
 professional courses in, 310
 recommendations for, 334-41
 of secondary school teachers, 62,
 79-80, 311-12, 321, 341, 349-50, 449
 (*see also* Canadian Mathematics
 Congress; Commission, Joint;
 Commission, on Mathematics;
 Commission, on Post-War Plans;
 Commission, on the Training and
 Utilization of Advanced Students
 of Mathematics; Committee, Co-
 operative, on the Teaching of Sci-
 ence and Mathematics; Committee,
 Secondary School Curriculum;
 Committee, on the Undergraduate
 Program in Mathematics)
 survey of teachers of high school
 mathematics, 328
 Teaching
 demonstration, 315

methods, 285, 414
as a profession, 302, 308, 309, 311,
320-21, 357

Teaching of Elementary Mathematics,
The (Smith), 42, 307

Teaching of Geometry, The (Fifth
Yearbook, NCTM), 223

*Teaching of Mathematics in the Ele-
mentary and Secondary School,
The* (Young), 42, 307

Teaching the New Arithmetic (Wil-
son), 120

Technology, 135, 248

Team teaching, 143, 176, 206, 215

Television courses, 80, 307, 432, 439,
440, 442-43, 448

Terman, Lewis Madison, 118

Tests, 215, 389, 413, 418, 420, 425
intelligence (*see* Mental measure-
ment)
standardized, 201, 205, 313, 315, 380,
381, 412, 419

Textbook of Geometry, A (Went-
worth), 162

Textbooks, 134, 156-57, 185, 217, 218,
238, 357, 367, 406. *See also under*
title or author's name
catechetical question-and-answer
format in, 17
in French-speaking Canada, 360-65
fusion, 176-77, 179
graded, 116
nineteenth-century arithmetic 31
non-Euclidean geometry, 178
as teaching devices, 160

Theoretical Geometry (Baker), 422

*Theory of Games and Economic Be-
havior, The* (Morgenstern and von
Neumann), 70

Thomas, George B., Jr., 260

Thorndike, Edward L., 38, 43, 47, 49,
115-16, 117, 118, 186-90, 207, 213-
14, 215, 217, 224, 313, 417, 420, 421,
423. *See also* Connectionism

Junior Mathematics series, 420
The Psychology of Algebra, 38, 187,
213
The Psychology of Arithmetic, 38,
113-14
The Thorndike Arithmetics, 38

Today's Geometry (Reichgott and
Spiller), 223

Tracks
two-track programs, 7, 54, 55, 60, 257

three-track programs, 56, 193
multitrack programs, 257

Transfer of training, 38, 56, 58, 84, 137,
187, 190, 196, 202, 205, 223, 227, 258

Treatise on Arithmetic, A (Smith), 424

"Trends in the Education of Secondary
School Mathematics Teachers"
(Schumaker), 329

Trigonométrie canonique (Morin), 360

Trigonométrie rectiligne (LaRue), 364

Trigonometry, 28, 51, 54, 55, 73, 78, 82,
172, 182, 206, 207, 221, 223, 228,
234, 242, 247, 254, 261, 276, 310,
366, 374, 377, 378, 394, 397, 405,
413, 423, 434, 440

in college entrance examinations, 209

numerical, 41, 47, 55

Tucker, Albert W., 256, 260, 409

Tyler, H. W., 43, 200

Understanding, 48, 62, 71, 72, 85, 131,
137, 177, 203, 216, 219, 225, 228,
229, 232, 242, 254, 255, 260, 408, 431,
458

Underwood, P. H., 43, 200

Unification movement, 173-77, 207,
421-24
reaction to, 177-79
in science and mathematics, 177

Unified mathematics, 33, 55, 78, 172-73,
174, 176-77, 179, 185, 192, 206, 219,
221, 244, 254, 389, 398, 401, 404, 411,
444
movement, 179, 215
textbooks for, 179

Unifix cubes, 443

Unifying concepts, 57; 73, 138, 160, 166,
174, 178, 216, 230, 248, 260, 261, 267,
282, 283, 284, 402-3

Unifying strands, 138, 140

Union Act of 1840, 375

Universal Mathematics (CUPM), 81

University
of Alberta, 432
Bishop's University, 368
Brown University, 18, 31
of California at Los Angeles, 80
of Chicago, 63, 176, 238, 270, 271, 331,
454
of Colorado, 74, 330, 331
Columbia University, 18, 43, 62, 81,
186; Teachers College, 31, 42, 454
Cornell University, 27
Dartmouth University, 15, 16, 18

University (*Continued*)
 DePauw University, 331
 Duke University, 80, 316, 330
 Emory University, 331
 Harvard University, 15, 16, 18, 19,
 21, 27, 28, 31, 158
 of Illinois, 72, 331
 of Illinois Arithmetic Project, 77, 140
 of Illinois Committee on School
 Mathematics (UICSM), 72-73, 74,
 76, 235, 238, 251-55, 256, 257, 258,
 267, 273, 284, 448
 Illinois State Normal University, 309
 Johns Hopkins University, 30
 Laval University, 355, 359, 361
 Louisiana State University, 80
 McGill University, 367, 368
 McMaster University, 399
 of Maryland Mathematics Project
 (UMMaP), 76, 83, 238, 269, 273,
 277, 284
 of Michigan, 27, 29, 31, 80, 331
 Université de Montréal, 359, 364
 New York University, 31
 Northwestern University, 41, 331
 Oklahoma A. and M. University, 331
 of Pennsylvania, 18, 20, 21
 of Philadelphia, 18, 20
 Princeton University, 18, 20, 21, 27
 of Quebec, 360
 Queen's University, 401-2
 of Rochester, 331
 Rutgers—the State University, 18,
 331
 Shaw University, 332
 Sir George Williams University, 368
 State, of New York College at
 Plattsburgh, 331
 of Toronto, 382, 383
 of Virginia, 20
 of Wisconsin, 79, 331
 Yale University, 16, 18, 19, 27, 28,
 75, 272
 Ursuline Convent, 355
 U.S. Bureau of Education, 40
 U.S. Coast and Geodetic Survey, 30
 U.S. Office of Education, 72, 74, 232,
 251, 328, 332. *See also* U.S. Bureau
 of Education
 survey of teachers of high school
 mathematics, 328
 Work: "Pre-Induction Courses in
 Mathematics" (with NCTM), 59,
 232

Usage cult, 207
 Utilitarian aims in mathematics educa-
 tion, 6, 28, 48, 67, 78, 95, 98-99,
 105, 110, 116, 120, 131-32, 133, 144,
 183, 190-92, 197, 219, 230, 231-33,
 234, 237, 239, 240, 258, 285, 321,
 389, 401, 418

Van Engen, Henry, 139, 260, 272, 365
 Van Liew, C. C., 306
 Variables
 as quantities, 178
 as unknowns, 160
 Vaughn, Herbert, 252
 Veblen, Oswald, 41, 42, 180
 Verbalization, 255, 294
 Ville Marie (Montreal), 355
Vocational Arithmetic (Holton and
 Paddock), 185
 Vocational education, 28, 51, 157, 184-
 85, 206, 378, 386, 393, 414
 Vocational needs, 53, 58, 158, 257

Wallis, John, 19
 Walsh, J. L., 256
 Washburne, Carleton, 125-26, 127
 Washington, George, 21
 Weaver, Fred, 205
 Weeks, Eula A., 43, 200
 Welte, Herbert, 222
 Wertheimer, Max, 216, 217
 West Point, 20, 28, 29
 Wheat, Harry G., 121, 307
Why Study Mathematics? (Canadian
 Mathematics Congress), 402
Why Study Mathematics? (Miller),
 402
 Wightman, S., 394
 Wigner, E. P., 456
 Wilder, R. L., 272
 Wilks, Samuel S., 231, 256, 259, 260,
 270, 272
 William and Mary, College of, 18
 Williams, S., 15
 Wilson, Guy M., 110, 122-23, 125, 190,
 307
 Wilson, Jack, 258
 Winthrop, John, 19, 21
 Wolff, Christian, 99
 Psychologia Rationalis, 99
 Wolfe, Dael, 250
 Woodring, Paul, 134
 Woods Hole Conference, 136, 280
 Woodward, B., 15, 157

Woodworth, R. S., 113
Wooton, William, 236, 270, 271, 272
Workman, J. G., 394-95
Workshops, 316, 328
World War II, 238, 327
 the effect on mathematics of, 58-60,
 231-33
 the effect on secondary schools of,
 231-33
Wren, F. Lynwood, 299, 307
Wurteen, Nathaniel, 14
Yates, Robert C., 409
Yerkes, Robert M., 118-19
Young, George Paxton, 377-79, 382
Young, Jacob William Albert, 42, 169,
 175, 176, 178, 207, 208, 307, 453, 454
 *Monographs on Topics in Modern
 Mathematics*, 42, 178
Young, John Wesley, 42, 43, 195, 198,
 200, 202
Young Secretary's Assistant, The
 (Hill), 12
Zacharias, Jerrold R., 74, 289, 291
Zenger, J. Peter, 16